SEQUENCE LISTING

<110> Stomp, Anne-Marie
Dickey, Lynn
Gasdaska, John

<120> Expression of Biologically Active
Polypeptides in Duckweed

<130> 40989/237225

<150> US 60/293,330
<151> 2001-05-23

<150> US 60/221,705
<151> 2000-07-31

<160> 8

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 554
<212> DNA
<213> Zea mays

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tgccgcagtg gcgctgatct tgtatgctat cctgcaatcg tggtgaactt atgtctttta 180
tatccttcac taccatgaaa agactagtaa tctttctcga tgtaacatcg tccagcactg 240
ctattaccgt gtggtccatc cgacagtctg gctgaacaca tcatacgata ttgagcaaag 300
atctatcttc cctgttcttt aatgaaagac gtcattttca tcagtatgat ctaagaatgt 360
tgcaacttgc aaggaggcgt ttctttcttt gaatttaact aactcgttga gtggccctgt 420
ttctcggacg taaggccttt gctgctccac acatgtccat tcgaatttta ccgtgtttag 480
caagggcgaa aagtttgcat cttgatgatt tagcttgact atgcgattgc tttcctggac 540
ccgtgcagct gcgg 554

<210> 2
<211> 498
<212> DNA
<213> Artificial Sequence

<220>
<223> Duckweed codon optimized nucleotide sequence
encoding human alpha-2B interferon

<221> CDS
<222> (1)...(498)

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Cys Asp Leu Pro Gln Thr His Ser Leu Gly Ser Arg Arg Thr Leu Met
1 5 10 15

ctg ctg gcg cag atg cgc cgc atc tcg ctc ttc agc tgc ctg aag gac 96
Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
20 25 30

cgc cac gac ttc ggc ttc ccg cag gag gag ttc ggc aac cag ttc cag 144
Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
35 40 45

aag gcc gag acg atc ccc gtg ctc cac gag atg atc cag cag atc ttc 192
Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
50 55 60

aac ctg ttc agc acc aag gac agc tcg gcc gcc tgg gac gag acc ctg 240
Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
65 70 75 80

ctc gac aag ttc tac acc gag ctg tac cag cag ctc aac gac ctg gag 288
Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
85 90 95

gcg tgc gtg atc cag ggg gtt ggg gtt acg gag acg ccg ctg atg aag 336
Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
100 105 110

gag gac agc atc ctc gcc gtg cgc aag tac ttc cag cgc atc acg ctc 384
Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
115 120 125

tac ctc aag gag aag aag tac agc ccg tgc gcc tgg gag gtc gtt cgc 432
Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
130 135 140

gcc gag atc atg cgc tcc ttc agc ctg agc acc aac ctc cag gag agc 480
Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
145 150 155 160

ctc cgc tcc aag gag taa 498
Leu Arg Ser Lys Glu *
165

<210> 3
<211> 96
<212> DNA
<213> Oryza sativa

<400> 3
accatgcagg tcctgaacac gatggtcaac aagcacttcc tctccctgtc cgtcctcatc 60
gtcctcctcg ggctgagcag caacctcacc gccggc 96

<210> 4
<211> 188
<212> PRT
<213> Homo sapiens

<400> 4
Met Ala Leu Thr Phe Ala Leu Leu Val Ala Leu Leu Val Leu Ser Cys

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Lys Ser Ser Cys Ser Val Gly Cys Asp Leu Pro Gln Thr His Ser Leu
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Gly Ser Arg Arg Thr Leu Met Leu Leu Ala Gln Met Arg Arg Ile Ser
        35                  40                  45
Leu Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu
    50                  55                  60
Glu Phe Gly Asn Gln Phe Gln Lys Ala Glu Thr Ile Pro Val Leu His
65                  70                  75                  80
Glu Met Ile Gln Gln Ile Phe Asn Leu Phe Ser Thr Lys Asp Ser Ser
                85                  90                  95
Ala Ala Trp Asp Glu Thr Leu Leu Asp Lys Phe Tyr Thr Glu Leu Tyr
            100                 105                 110
Gln Gln Leu Asn Asp Leu Glu Ala Cys Val Ile Gln Gly Val Gly Val
        115                 120                 125
Thr Glu Thr Pro Leu Met Lys Glu Asp Ser Ile Leu Ala Val Arg Lys
    130                 135                 140
Tyr Phe Gln Arg Ile Thr Leu Tyr Leu Lys Glu Lys Lys Tyr Ser Pro
145                 150                 155                 160
Cys Ala Trp Glu Val Val Arg Ala Glu Ile Met Arg Ser Phe Ser Leu
                165                 170                 175
Ser Thr Asn Leu Gln Glu Ser Leu Arg Ser Lys Glu
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<210> 5
<211> 165
<212> PRT
<213> Homo sapiens

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Leu Leu Ala Gln Met Arg Arg Ile Ser Leu Phe Ser Cys Leu Lys Asp
            20                  25                  30
Arg His Asp Phe Gly Phe Pro Gln Glu Glu Phe Gly Asn Gln Phe Gln
        35                  40                  45
Lys Ala Glu Thr Ile Pro Val Leu His Glu Met Ile Gln Gln Ile Phe
    50                  55                  60
Asn Leu Phe Ser Thr Lys Asp Ser Ser Ala Ala Trp Asp Glu Thr Leu
65                  70                  75                  80
Leu Asp Lys Phe Tyr Thr Glu Leu Tyr Gln Gln Leu Asn Asp Leu Glu
                85                  90                  95
Ala Cys Val Ile Gln Gly Val Gly Val Thr Glu Thr Pro Leu Met Lys
            100                 105                 110
Glu Asp Ser Ile Leu Ala Val Arg Lys Tyr Phe Gln Arg Ile Thr Leu
        115                 120                 125
Tyr Leu Lys Glu Lys Lys Tyr Ser Pro Cys Ala Trp Glu Val Val Arg
    130                 135                 140
Ala Glu Ile Met Arg Ser Phe Ser Leu Ser Thr Asn Leu Gln Glu Ser
145                 150                 155                 160
Leu Arg Ser Lys Glu
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<210> 6
<211> 31

<212> PRT
<213> Oryza sativa

<400> 6
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<210> 7
<211> 31
<212> PRT
<213> Artificial Sequence

<220>
<223> Modified rice alpha-amylase signal peptide

<400> 7
Met Gln Val Leu Asn Thr Met Val Asn Lys His Phe Leu Ser Leu Ser
 1               5                  10                  15
Val Leu Ile Val Leu Thr Val Leu Ser Ser Asn Leu Thr Ala Gly
            20                  25                  30

<210> 8
<211> 21
<212> PRT
<213> Arabidopsis thaliana

<400> 8
Met Lys Thr Asn Leu Phe Leu Phe Leu Ile Phe Ser Leu Leu Leu Ser
 1               5                  10                  15
Leu Ser Ser Ala Glu
            20